CANOPY

Connected sensors for real-time monitoring of the potato canopy and optimised protection of plants against the virus Y

Abstract

Virus Y (PVY) is one of the major health problems facing seed potato production. The only way to protect plants against it is to spray them with mineral oil. Today, these oils are applied at a rate that is adapted to the crop as a whole, but tomorrow the aim is to adapt these spraying frequencies to the variety as a whole, taking into account its actual leaf growth rate and its level of sensitivity to PVY. Real-time monitoring of canopy development will be carried out via a wireless sensor network consisting of ultrasound sensors for monitoring plant height and spectral reflectance sensors for calculating a vegetation index (NDVI). This network will be deployed and tested at several experimental sites. An ad hoc information system will be developed to retrieve, store and display the data. This digital tool will then be used to test new oil application strategies adapted to the actual growth of each cover.

Actions

Action 1 : implementation and deployment of the network of fixed sensors on experimental sites and validation of physical measurements

Action 2 : multi-year, multi-site experimental validation of dynamic monitoring of plant cover

Action 3 : development of an information system for collecting, storing and displaying data from the sensor network

Action 4 : optimising the frequency of oil application at plot level using real-time monitoring of the crop canopy

Action 5 : general coordination, promotion and distribution

TECHNICAL MEMO

Call for projects:
CASDAR 2020 RT

Project leader:

Project duration: 42 months

Start/End of project:

01/10/2020 – 31/03/2025

Partners:
- The 3 regional growers organisations : Comité Centre et Sud, Comité Nord, Bretagne Plants
- INRAE IGEPP

Other partner (excluding financing) :
- PESSL Instruments GmbH (Autria)

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